

nurses and curtailment of facilities for training for State registration.

Dr. I. M. Librach (May 7, p. 1429) does not recognize this distinction and wants all nurses to be trained to the same high standard, and extra help on the wards to be given by ward orderlies, porters, domestics, or nursing auxiliaries—presumably untrained. The basis for the distinction between the two grades of nursing is the fact that many nursing procedures can be correctly performed by nurses who have not had the long theoretical training necessary for the present State registration. But these are nursing procedures and should be carried out by nurses, not orderlies, etc.

It does not follow that the existing grade of assistant nurse is correct. I have no recent experience of working with State-enrolled assistant nurses and can say nothing about their training capabilities or usefulness, but the name "assistant nurse" is surely wrong. Another undesirable feature is that this grade is a dead-end from which there is no advancement except by starting again at the bottom of another ladder as a student nurse. Can we imagine any girl of school-leaving age wanting to become and remain an "assistant nurse"? A few days ago two student nurses in the hospital to which I am attached failed to pass out of the preliminary training school. Matron advised them to train for the assistant nurses' roll. Both had the potentialities of excellent practical nurses, but neither would consider becoming an assistant nurse.

The whole structure of the nursing profession should be reorganized to abolish the unfortunately named grade of assistant nurse and replace it by a grade which would be the first stage on the way to the equivalent of the present State registration. Almost invariably the first job a State-registered nurse obtains is staff nurse in a hospital. Why not recognize that fact? The present State-registered nurse could easily be renamed State-registered staff nurse—S.R.S.N.—allowing the lower grade to be State-registered nurses.

The training for the new State registration would be essentially practical and last about 18 months, and the registered nurse would be expected to be competent in all bedside nursing and the administration of medicines and injections and in minor dressing procedures. She would not be expected to know any theory nor would she be expected to be in sole charge of a ward with the responsibility for drugs—dangerous or otherwise. Training for this grade should be in all those hospitals which are at present recognized training schools for registered nurses or assistant nurses, but the qualifications required by the tutors could be much lower than those demanded now in nurse-training schools. Those State-registered nurses of sufficient educational attainment could proceed to selected hospitals for training for the higher qualification of S.R.S.N. Fully qualified tutors, of which there is a shortage, would probably be confined to those training schools.

The small hospitals which are now in danger of losing recognition as nurse-training schools are much more likely to co-operate in a scheme as outlined above rather than lose status and become training centres for State-enrolled assistant nurses. The proposed scheme would also bring the nursing profession into line with the medical profession with a single register, and the registration of higher qualification in general nursing, midwifery, mental nursing, etc., as they are obtained.—I am, etc.,

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"Imferon" and Cancer

SIR,—I have read with interest Dr. J. G. A. Pedersen's letter (May 21, p. 1564) on the carcinogenic action of imferon. There may, however, have been some misunderstanding between us. Certainly we¹ were of opinion that the carcinogenic effect is decided mainly by

the absolute amount administered, and only secondarily, if at all, by the relation of this to the body-weight. We saw no evidence to suggest that over-saturation of the organism with iron is a necessary factor in the induction of sarcomata at the injection site, although it was doubtless responsible for the observed yield of tumours in distant organs. Since repeated subcutaneous doses of 0.2–0.3 ml. of imferon produce a high yield of sarcomata in the mouse, we could not feel confident that total doses of (say) 60 ml. intramuscularly in man would necessarily be harmless.

Since the date when our paper was published, this feeling has been strengthened by the observation of sarcomata in mice following repeated weekly subcutaneous injections of imferon of 0.05 ml., in an experiment which still continues. I agree we have insufficient data to allow precise comparison of the carcinogenicity of imferon with that of certain other absorbable iron compounds, and it well may be, as Dr. Pedersen concludes, that great caution must be recommended regarding the dose of iron injected subcutaneously or intramuscularly, or possibly even intravenously, in man.—I am, etc.,

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REFERENCE

- ¹ Haddow, A., and Horning, E. S., *J. nat. Cancer Instn.*, 1960, **24**, 109.

SIR,—In their report (May 7, p. 1411) describing the coincidence of a metastatic tumour at the site of injection of iron-dextran complex ("imferon") Drs. J. D. Crowley and W. J. S. Still draw attention to the residual iron and state that the large number of iron-containing histiocytes "was greater than that reported at similar injection sites by Golberg (1960)." We consider that the unique features of their case lie not in an unusual amount of residual iron but in the development of an exuberant fibrous reaction in the subcutaneous fat, and in the presence of "intense reactive hyperplasia induced in the subcutaneous tissues by the injection of iron dextran." It is not clear whether the authors regard these features as normal accompaniments of iron-dextran injections in human tissues. In fact they are grossly abnormal and must be considered as peculiar to the particular case described.

Our own human material shows that the only abnormal finding in the skin and subcutaneous tissues some weeks after an injection of iron-dextran complex is the presence of iron-laden macrophages. Fig. 1 illustrates skin taken 23 days after a subcutaneous injection of 2 ml. of imferon. At this time all the iron visible histochemically is intracellular. Though we have not had an opportunity of examining human tissues from areas of "imferon staining" at five to six months following imferon injection, as Drs. Crowley and Still have done, we see no alteration in the histological picture in material taken at one, two, or more years following a course of injections (Fig. 2). In none of our material have we ever seen evidence of fibrous reaction or reactive hyperplasia.

The small amount of iron illustrated in our Figs. 1 and 2 and in Fig. 2 of Drs. Crowley and Still contrasts markedly with that found in experimental animals treated according to Haddow and Horning.¹ Fig. 3 shows a small area of the subcutaneous injection site after only 10 weekly injections of 0.2 ml. iron-dextran into a mouse. Even this is less than the doses used to induce sarcomata in these animals. The whole of the subcutaneous tissue in the injection site is packed with iron-laden macrophages obliterating the original structures. In some places transitions from the macrophages to fibrous tissue can be

clearly seen. The underlying muscle in these animals undergoes a continuous process of necrosis and regeneration in the neighbourhood of iron deposits. In our opinion there is little in common between the human cases and these grossly overloaded animals.

Finally it is worth pointing out that the tissues examined by Drs. Crowley and Still were from the neighbourhood of a necrotic tumour and had been subjected to operative trauma and irradiation, factors which in our experience are more liable than the haemosiderin within the macrophages to produce the reactions described. We feel, therefore, that there is really no

evidence to support the conclusion that the "intense reactive hyperplasia" was induced in the subcutaneous tissues by iron-dextran.

Our thanks are due to Mr. Lynn A. J. Evans, F.R.C.S., who provided the skin for the section shown in Fig. 2.

—We are, etc.,

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REFERENCE

- ¹ Haddow, A., and Horning, E. S., *J. nat. Cancer Instn*, 1960, 24, 109.

Urogenital Infection and Arthritis

SIR,—“It is a problem the importance of which cannot be overestimated, for its solution might well open the way to a proper understanding of a wide-spread communicable disease, a serious eye disease, and perhaps the rheumatic diseases as a whole.” This, the concluding sentence of your leading article on ankylosing spondylitis and urogenital infection (March 19, p. 865), needs but the addition of psoriasis/keratoderma blennorrhagica to become a complete restatement of the views urged by me with but little success in your correspondence columns¹ for the past ten years. As the full value of this view to future research depends upon an accurate appreciation of present knowledge, I would like to make the following points.

Chronic Prostatitis.—The diagnosis of this condition rests purely on empirical criteria of the microscopical appearances of mechanically expressed prostatic fluid, and let it be added that increasing the number of empirical counts in no way increases accuracy. Furthermore, the fact that some 20 to 40% of normal controls show similar findings gives added point to the point that any conclusions based on investigation into “chronic prostatitis” are utterly useless in our present state of knowledge.

Serological Tests for Rheumatoid Arthritis.—It cannot be too often stated that there are no such tests; all that may be said is that there are cases of arthritis in which certain tests are positive, but, since we are ignorant of why they are positive, it is presumptuous and inaccurate to state that these cases constitute a disease *sui generis*.

Urethritis.—Much confusion still exists on this subject, due, I believe, to the fact that non-gonococcal, non-specific, and abacterial are often used as interchangeable terms, and in the following short résumé I will attempt to clarify the field and introduce new knowledge uncovered over the past 20 years which has as yet been imperfectly assimilated.

For all practical purposes there are four types of urethritis: (1) gonococcal urethritis, (2) *Trichomonas vaginalis* urethritis, (3) urethritis giving an abacterial smear which *sometimes* accompanies abacterial pyuria (primarily a bladder condition), and (4) non-specific urethritis (A and B). Since a known organism is present in (1) and (2), difficulty in diagnosis can only arise between (3) and (4). However, if it is remembered that (3) occurs in the course of a primarily bladder condition it must be associated with signs of cystitis—i.e., frequency, with haze in both glasses in the simple two-glass test. The abacterial smear obtained from this type of urethritis cannot therefore fail to be correctly interpreted, and the diagnosis is confirmed by the complete cure following injections of N.A.B.—a method of treatment useless in type (4) below.

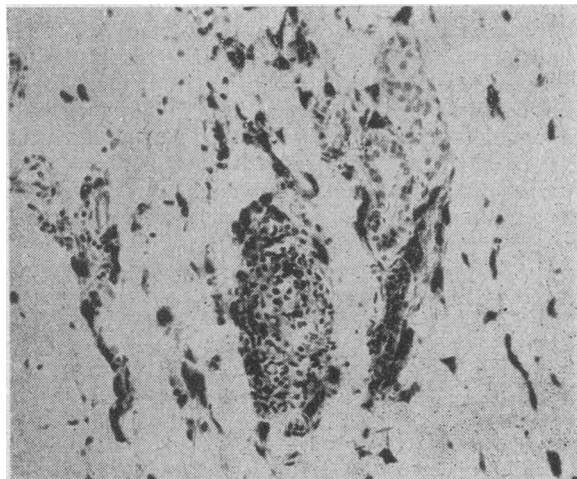


FIG. 1.—Subcutaneous iron-laden macrophages showing tendency to aggregate around sweat glands; 23 days after subcutaneous injection of imferon. (Perls's iron. X170.)

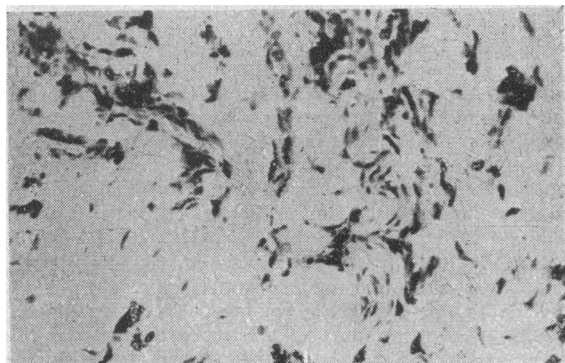


FIG. 2.—Subcutaneous iron-laden macrophages from an area of skin staining two years after a therapeutic course of imferon. (Perls's iron. X170.)

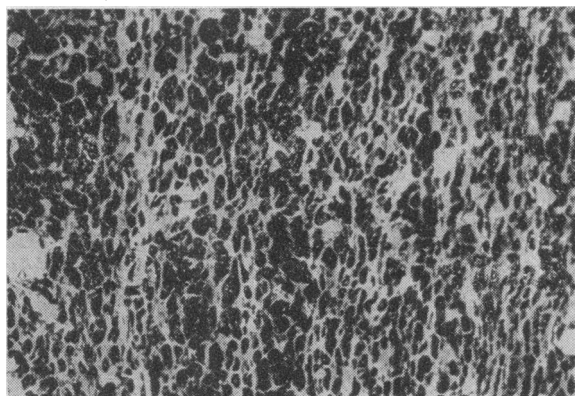


FIG. 3.—Site of 10 weekly subcutaneous injections of imferon in the mouse, showing typical accumulation of iron-laden macrophages. (Perls's iron. X170.)